

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C.20231
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 19 August 1999 (19.08.99)	
International application No. PCT/IB99/00001	Applicant's or agent's file reference
International filing date (day/month/year) 05 January 1999 (05.01.99)	Priority date (day/month/year) 09 January 1998 (09.01.98)
Applicant JACCARD, Léon et al	

1. The designated Office is hereby notified of its election made:



in the demand filed with the International Preliminary Examining Authority on:

14 July 1999 (14.07.99)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740 14.35

Authorized officer:

S. Mafla

Telephone No.: (41-22) 338.83.38

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF THE INTERNATIONAL
APPLICATION NUMBER AND OF THE
INTERNATIONAL FILING DATE

(PCT Rule 20.5(c))

From the RECEIVING OFFICE

To:

SPANDONARI, Carlo
Spandonari & Modiano S.r.l.
Corso Duca degli Abruzzi 16
I-10129 Torino
ITALIE

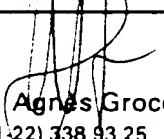
Date of mailing (day/month/year) 05 January 1999 (05.01.99)		
Applicant's or agent's file reference		IMPORTANT NOTIFICATION
International application No. PCT/IB99/00001	International filing date (day/month/year) 05 January 1999 (05.01.99)	
Priority date (day/month/year) 09 January 1998 (09.01.98)		
Applicant GREEN POWER ENGINEERING & TECHNOLOGIES S.A. et al		
Title of the invention A PROCESS AND APPARATUS FOR TREATING SOLID FUEL MATERIALS		

1. The applicant is hereby notified that the international application has been accorded the international application number and the international filing date indicated above.

2. The applicant is further notified that the record copy of the international application:

- ☒ was transmitted to the International Bureau on 05 January 1999 (05.01.99)
- ☐ has not yet been transmitted to the International Bureau for the reason indicated below and a copy of this notification has been sent to the International Bureau*:
- ☐ because the necessary national security clearance has not yet been obtained.
- ☐ because (reason to be specified):

* The International Bureau monitors the transmittal of the record copy by the receiving Office and will notify the applicant (with Form PCT/IB/301) of its receipt. Should the record copy not have been received by the expiration of 14 months from the priority date, the International Bureau will notify the applicant (Rule 22.1(c)).

Name and mailing address of the receiving Office International Bureau of WIPO PCT Receiving Office Section 34, chemin des Colombettes, 1211 Geneva 20, Switzerland Facsimile No. (41-22) 910 06 10 (Groups 3 and 4)	Authorised officer  Agnès Grocq Telephone No. (41-22) 338 93 25
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PATENT COOPERATION TREATY

PCT

NOTIFICATION CONCERNING
SUBMISSION OR TRANSMITTAL
OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

From the INTERNATIONAL BUREAU


To:

SPANDONARI, Carlo
Spandonari & Modiano s.r.l.
Corso Duca degli Abruzzi, 16
I-10129 Torino
ITALIE

Date of mailing (day/month/year) 25 February 1999 (25.02.99)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference	
International application No. PCT/IB99/00001	International filing date (day/month/year) 05 January 1999 (05.01.99)
International publication date (day/month/year) Not yet published	Priority date (day/month/year) 09 January 1998 (09.01.98)
Applicant GREENPOWER ENGINEERING & TECHNOLOGIES S.A. et al	

1. The applicant is hereby notified of the date of receipt (except where the letters "NR" appear in the right-hand column) by the International Bureau of the priority document(s) relating to the earlier application(s) indicated below. Unless otherwise indicated by an asterisk appearing next to a date of receipt, or by the letters "NR", in the right-hand column, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
2. This updates and replaces any previously issued notification concerning submission or transmittal of priority documents.
3. An asterisk(*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b). In such a case, **the attention of the applicant is directed** to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
4. The letters "NR" appearing in the right-hand column denote a priority document which was not received by the International Bureau or which the applicant did not request the receiving Office to prepare and transmit to the International Bureau, as provided by Rule 17.1(a) or (b), respectively. In such a case, **the attention of the applicant is directed** to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

<u>Priority date</u>	<u>Priority application No.</u>	<u>Country or regional Office or PCT receiving Office</u>	<u>Date of receipt of priority document</u>
09 Janu 1998 (09.01.98)	0035/98	CH	24 Febr 1999 (24.02.99)

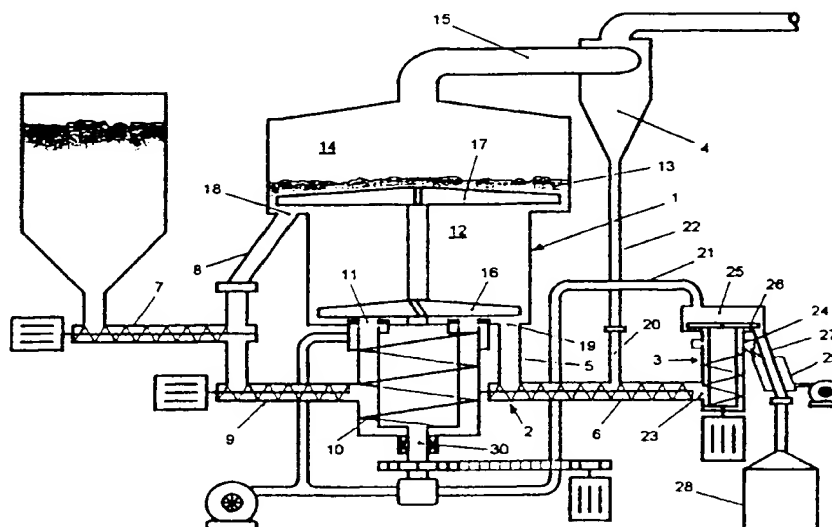
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 740.14.35	Authorized officer  Nicola Wolff Telephone No. (41-22) 338.83.38
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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : C10J 3/02, 3/26		A1	(11) International Publication Number: WO 99/35214
			(43) International Publication Date: 15 July 1999 (15.07.99)
(21) International Application Number: PCT/IB99/00001		(81) Designated States: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HR, HU, ID, IL, IS, JP, KP, KR, LK, LR, LT, LV, MG, MK, MX, NZ, PL, RO, SG, SI, SK, TR, UA, US, VN, YU, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).	
(22) International Filing Date: 5 January 1999 (05.01.99)			
(30) Priority Data: 0035/98 9 January 1998 (09.01.98) CH			
(71) Applicant (for all designated States except US): GREEN-POWER ENGINEERING & TECHNOLOGIES S.A. [CH/CH]; CH-6986 Curio (CH).			
(72) Inventors; and (75) Inventors/Applicants (for US only): JACCARD, Léon [CH/CH]; Gradisetta, CH-6986 Curio (CH). JACCARD, Jean, Patrick [CH/CH]; Gradisetta, CH-6986 Curio (CH).			
(74) Agent: SPANDONARI, Carlo; Spandonari & Modiano s.r.l., Corso Duca degli Abruzzi, 16, I-10129 Torino (IT).		Published With international search report.	

(54) Title: A PROCESS AND APPARATUS FOR TREATING SOLID FUEL MATERIALS



(57) Abstract

Solid fuels, such as contaminated biomass and solid city waste, are converted into a synthesized gas by gasification and exploitation of the energy contained in the fuels. The fuel is gasified in a co-current gasogen (1), while the cinders are separated, removed and purified after a fraction of the fuels has undergone combustion and before the fuel has been gasified. Cinder purification is made by complete combustion, while the fuel that has undergone the gasification step without being completely transformed in CO is recirculated by mixing it to fresh fuel material. The process is carried out in an apparatus comprising a vertical co-current gasogen (1) and a device for mixing the separation and removal of cinders (16, 19, 5, 6) as well as a scorification chamber (3) where cinders are purified from accompanying fuel material by complete combustion and are then collected in a waste tank (28).

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
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BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
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DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

To:

SPANDONARI, Carlo
Spandonari & Modiano s.r.l.
Corso Duca degli Abruzzi, 16
I-10129 Torino
ITALIE

NOTIFICATION OF RECEIPT OF DEMAND BY COMPETENT INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

(PCT Rules 59.3(e) and 61.1(b), first sentence
and Administrative Instructions, Section 601(a))

Date of mailing
(day/month/year)

13. 08. 99

Applicant's or agent's file reference
3001

IMPORTANT NOTIFICATION

International application No.

PCT/IB 99/00001

International filing date (day/month/year)

05/01/1999

Priority date (day/month/year)

09/01/1998

Applicant

GREENPOWER ENGINEERING & TECHNOLOGIES S.A. et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority considers the following date as the date of receipt of the demand for international preliminary examination of the international application:

14/07/1999

2. This date of receipt is:

- ☒ the actual date of receipt of the demand by this Authority (Rule 61.1(b)).
- ☐ the actual date of receipt of the demand on behalf of this Authority (Rule 59.3(e)).
- ☐ the date on which this Authority has, in response to the invitation to correct defects in the demand (Form PCT/IPEA/404), received the required corrections.

3. ☐ **ATTENTION:** That date of receipt is **AFTER** the expiration of 19 months from the priority date. Consequently, the election(s) made in the demand does (do) not have the effect of postponing the entry into the national phase until 30 months from the priority date (or later in some Offices) (Article 39(1)). Therefore, the acts for entry into the national phase must be performed within 20 months from the priority date (or later in some Offices) (Article 22). For details, see the *PCT Applicant's Guide*, Volume II.

- ☐ (If applicable) This notification confirms the information given by telephone, facsimile transmission or in person on:

4. Only where paragraph 3 applies, a copy of this notification has been sent to the International Bureau.

Name and mailing address of the IPEA/



European Patent Office
D-80598 Munich
Tel. (+49-89) 2399-0, Tx: 523656 epmu d
Fax: +49-89) 2399-4465

Authorized officer

Catherin e Comte

Comte

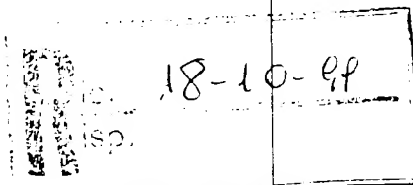
Telephone No.

PATENT COOPERATION TREATY

From the:
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

SPANDONARI, Carlo
Spandonari & Modiano s.r.l.
Corso Duca degli Abruzzi, 16
I-10129 Torino
ITALIE



PCT

WRITTEN OPINION

(PCT Rule 66)

Date of mailing (day/month/year) 15. 10. 99	
Applicant's or agent's file reference 3001	REPLY DUE within 2 month(s) from the above date of mailing
International application No. PCT/IB99/00001	International filing date (day/month/year) 05/01/1999
Priority date (day/month/year) 09/01/1998	
International Patent Classification (IPC) or both national classification and IPC C10J3/02	
Applicant GREENPOWER ENGINEERING & TECHNOLOGIES S.A. et al.	

1. This written opinion is the **first** drawn up by this International Preliminary Examining Authority.
2. This opinion contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement
 - VI ☐ Certain document cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application
3. The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also: For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: **09/05/2000**.

Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel: +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer / Examiner Willsher, C Formalities officer (incl. extension of time limits) Gregoire, J-P Telephone No. +49 89 2399 8041
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I. Basis of the opinion

1. This opinion has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*):

Description, pages:

1-11 as originally filed

Claims, No.:

1-14 as originally filed

Drawings, sheets:

1/1 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

3. This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1-14(YES)
Inventive step (IS)	Claims	1-14(NO)
Industrial applicability (IA)	Claims	

2. Citations and explanations

see separate sheet

1. Presently claimed subject-matter can be regarded as novel over the closest prior art (DE-A-2 729 764, Document D1), since in the process (claims 1-9) the cinders are removed after partial combustion but before gasification, and in the apparatus a device (17,18,8) recirculates material from the top of the gasification chamber to meet the fresh feed. However, these differences do not give rise to an inventive step.
2. The technical problem to be solved is to produce optimal cinders which do not clog the gasogen (page 2, lines 19-24). However, the absence of examples means that no technical proof exists that this solution has indeed been achieved. It is evident that the process described in D1 (Figure 1; page 9, final paragraph to end of page 11) provides efficient gasification through withdrawal of ash in line 12 followed by burning off in incinerator 11. The cinders are finally removed through line 14. Furthermore, it is evident that gasified fuel in gasifier 1 is effectively subjected to continuous internal recycle within the gasifier itself. Thus the IPEA sees no technical effect resulting from the characterising features recited in present claim 1. For this reason, no inventive step can be acknowledged for the subject-matter of present claims 1-9
3. The same argumentation applies to the apparatus described in presents claim 10-14. No inventive step can be recognised for the subject-matter of these claims.
4. Claim 1-14 are not allowable under Article 33(3) PCT.
5. The applicant is advised that a positive Report is unlikely to be issued on the basis of the current application documents. The filing of examples is therefore recommended, and the letter of reply should indicate how these examples are considered to support an inventive step.



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**Europäisches
Patentamt**

Generaldirektion 2

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Patent Office**

Directorate General 2

**Office européen
des brevets**

Direction Générale 2

Correspondence with the EPO on PCT Chapter II demands

In order to ensure that your PCT Chapter II demand is dealt with as promptly as possible you are requested to use the enclosed self-adhesive labels with any correspondence relating to the demand sent to the Munich Office.

One of these labels should be affixed to a prominent place in the upper part of the letter or form etc. which you are filing.

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

SPANDONARI & MODIANO s.r.l.
Corso Duca degli Abruzzi, 16
I-10129 Torino
ITALIE

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Rule 71.1)

Date of mailing (day/month/year)	16.03.2000
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Applicant's or agent's file reference 3001	IMPORTANT NOTIFICATION
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International application No PCT/IB99/00001	International filing date (day/month/year) 05/01/1999	Priority date (day/month/year) 09/01/1998
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Applicant GREENPOWER ENGINEERING & TECHNOLOGIES S.A. et al.
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1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/	Authorized officer
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 European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx. 523656 epmu d Fax: +49 89 2399 - 4465	Gregoire, J-P Tel +49 89 2399-8041
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 3001		See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) FOR FURTHER ACTION	
International application No PCT/IB99/00001	International filing date (day/month/year) 05/01/1999	Priority date (day/month/year) 09/01/1998	
International Patent Classification (IPC) or national classification and IPC C10J3/02			
Applicant GREENPOWER ENGINEERING & TECHNOLOGIES S.A. et al.			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input checked="" type="checkbox"/> Certain observations on the international application 			
Date of submission of the demand 14/07/1999		Date of completion of this report 16.03.2000	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx. 523656 epmu d Fax +49 89 2399 - 4465		Authorized officer Van Iddekinge, R Telephone No. +49 89 2399 8346	



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IB99/00001

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

1-11 as originally filed

Claims, No.:

1-14 as originally filed

Drawings, sheets:

1 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IB99/00001

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-14
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-14
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-14
	No:	Claims	

2. Citations and explanations

see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- 1). Reference is made to the following documents:

D1=DE-A-2729764

D2=EP-A-565935

Novelty

- 2). The process according to claim 1 differs from that of D1 in that the cinders are removed after partial combustion but before gasification and in that a co-current gas generator is used.

The main difference between the process according to claim 1 and that of D2 is that the cinders are removed after partial combustion but before gasification.

The apparatus according to claim 10 differs from that of D1 in that in the apparatus a device (17,18,8) recirculates material from the top of the gasification chamber to meet the fresh feed and in that the gas generator is a co-current gas generator.

The main difference between the apparatus according to claim 10 and that of D2 is that a recirculation device is located at the top of the gasification chamber.

Therefore claims 1 and 10 and their dependent claims 2-9, 11-14 fulfil the requirements of Article 33(2) PCT (novelty).

Inventive Step

- 3). The object of the present application is to produce optimal cinders which do not clog the gas generator (page 2, lines 19-24).

D1 appears to be less relevant for the inventive step because the gas generator is a counter-current gas generator and not a co-current gas generator (different problems).

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IB99/00001

In D2 the recirculation takes place within the combustion chamber itself, and not by mixing the recirculating material to the fresh fuel before this enters the gas generator. The gas generator of D2 does not have a device for separating and withdrawing the solid cinders from the combustion process, so that the cinders will remain in the combustion chamber and contaminate the process

Therefore claims 1 and 10 and their dependent claims 2-9, 11-14 fulfil the requirements of Article 33(3) PCT (inventive step).

Re Item VIII

Certain observations on the international application

- 4). The meaning of the term "gasogen(e)" used in claims 1, 5, 10-12 and in the description is not known. The word cannot be found in any dictionary available to the present examiner. It is assumed that a gas generator is meant (Article 6 PCT).